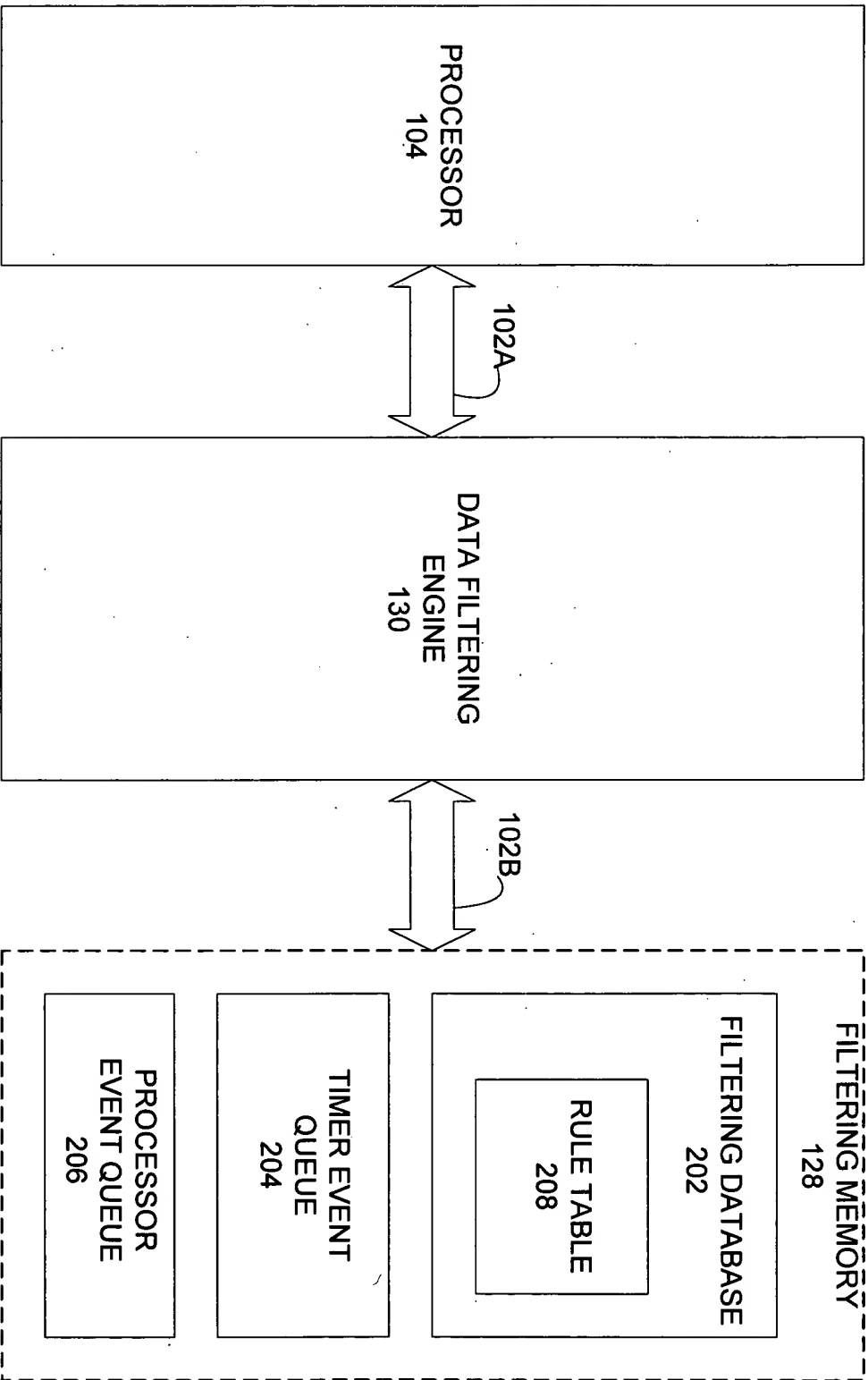


1/13/99

FIGURE 1

09240919.01



200

FIGURE 2

(SEQUENTIAL DATA FILTERING  
SYSTEM) 200

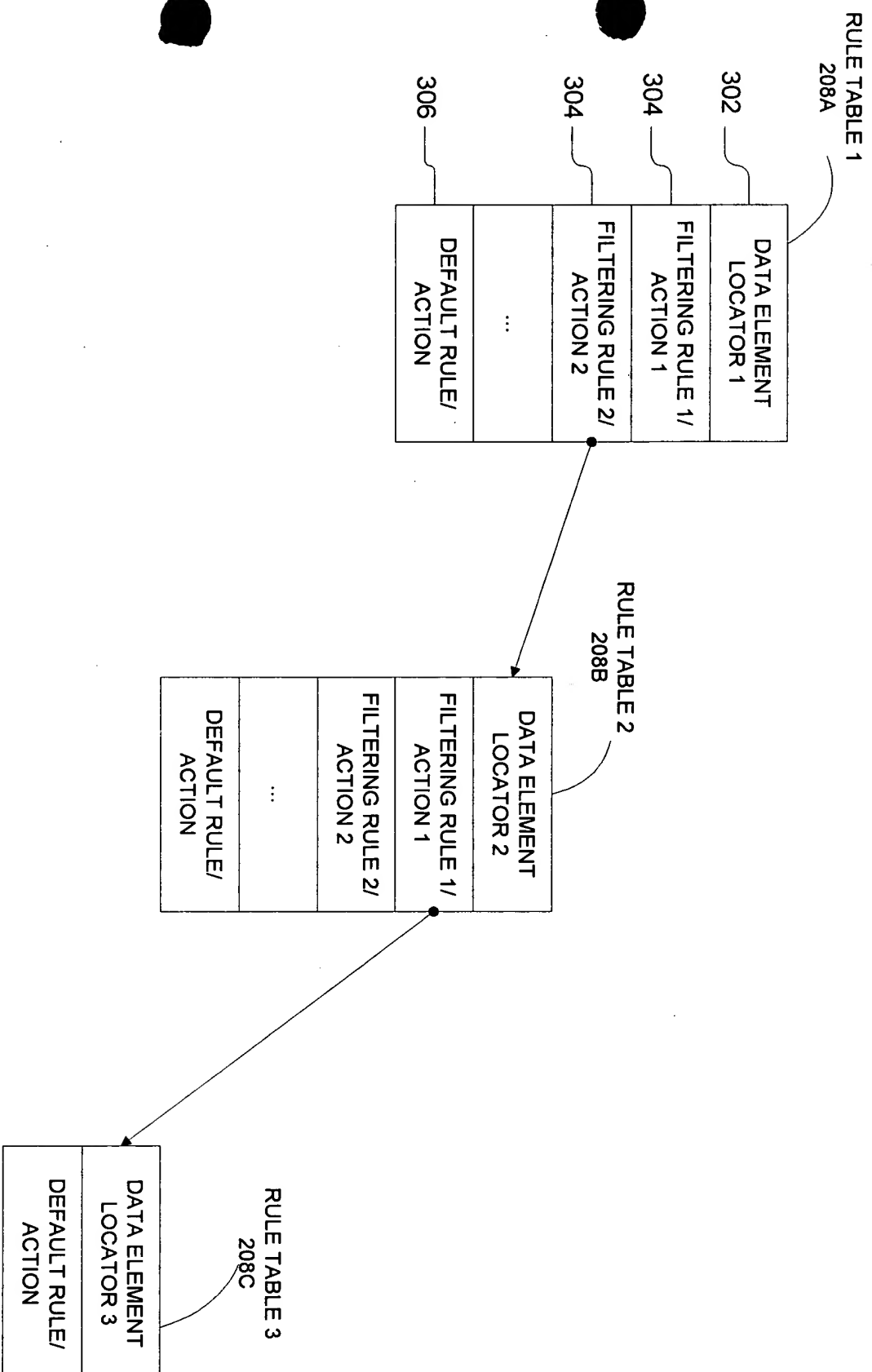


FIGURE 3

MULTI-WAY DECISION TREE AS  
LINKED RULE TABLES

TYPE FIELD	TYPE == DATA ELEMENT LOCATOR 402		
FIELD SELECTION	OFFSET 406	MASK 408	
RULE POINTER	RULE POINTER 410		
DEFAULT RULE POINTER	DEFAULT RULE POINTER 411		
TABLE ID	TABLE ID 412		
TABLE TIMER	TIMER CONTROL 414	RELOAD VALUE 416	TIMER VALUE 418
TREE	LEFT POINTER 420	RIGHT POINTER 422	BALANCE FACTOR 424

FIGURE 4  
(DATA ELEMENT LOCATOR  
STRUCTURE)

302

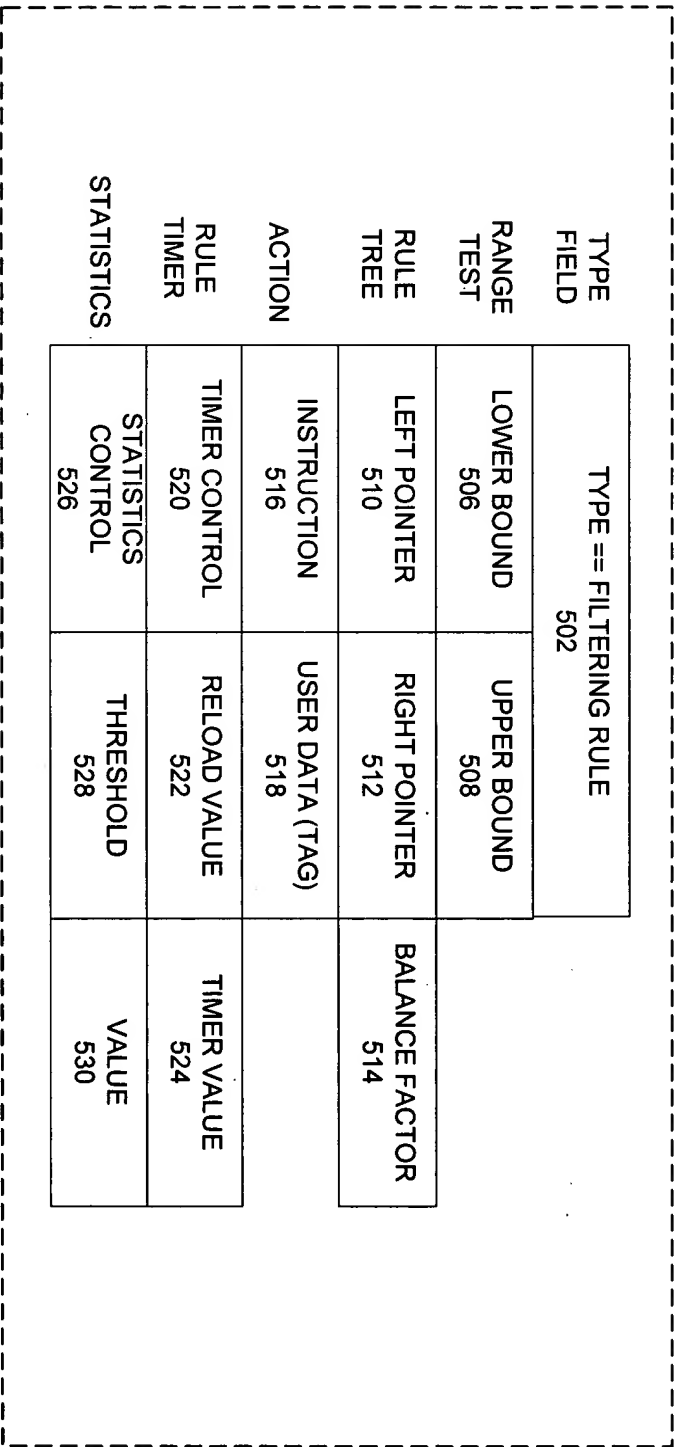


FIGURE 5A  
(FILTERING RULE)

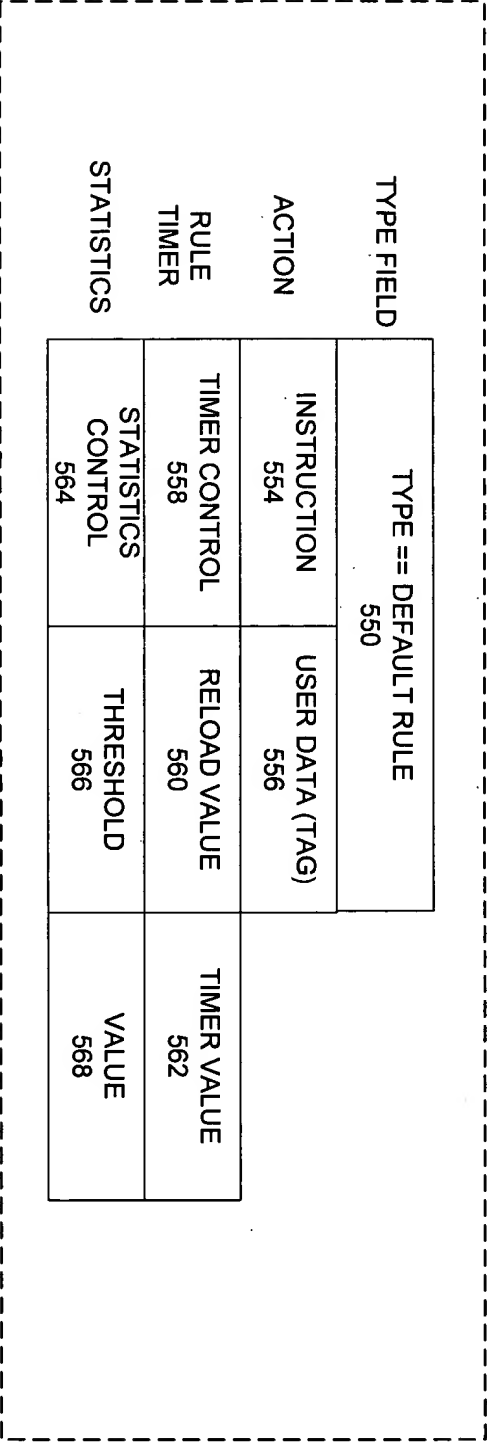


FIGURE 5B  
DEFAULT RULE

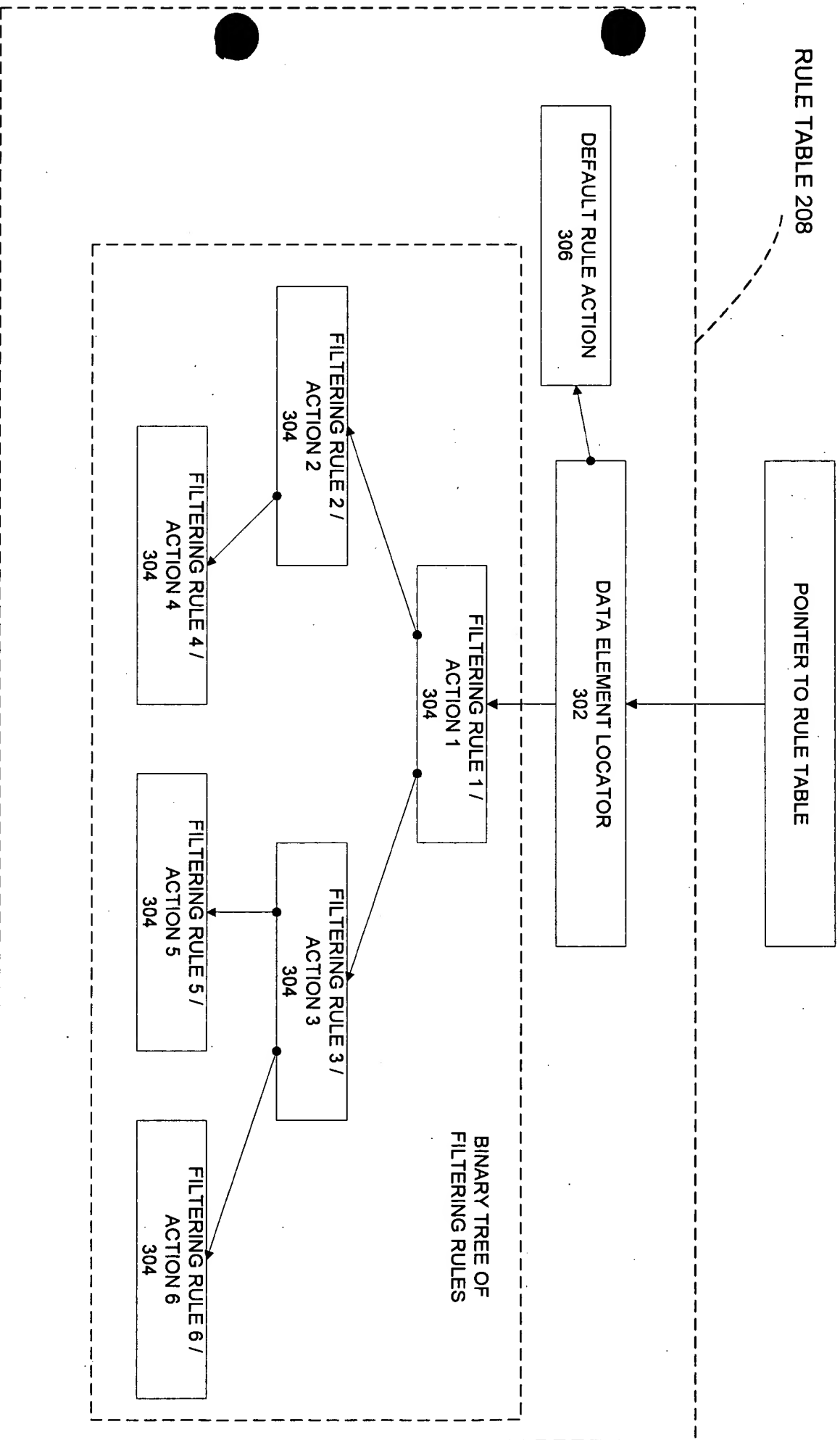


FIGURE 6  
(RULE TABLE WITH A BINARY TREE OF FILTERING RULES)

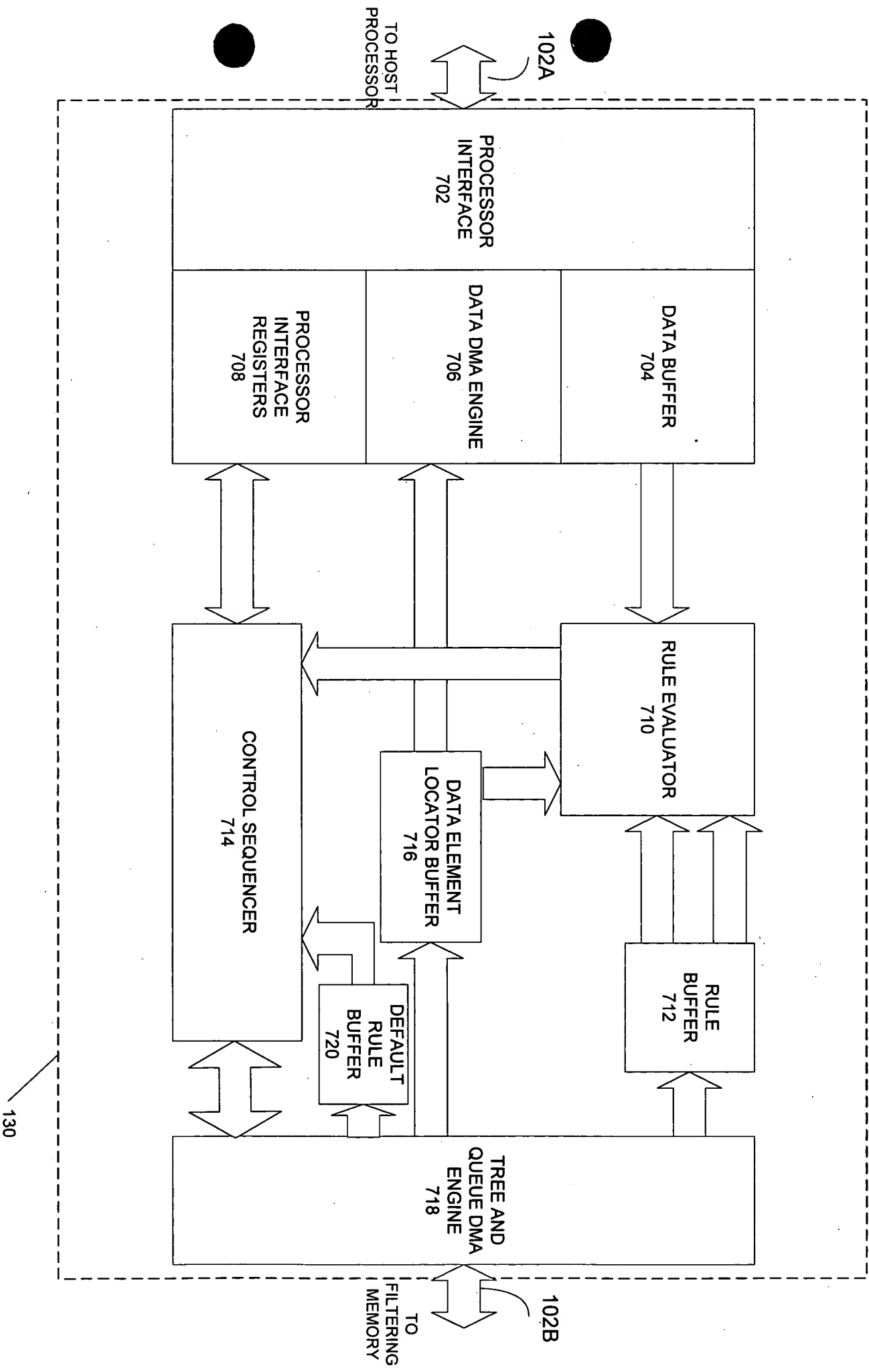


FIGURE 7  
DATA FILTERING ENGINE  
09240919.012999

INPUT DATA STARTING AT  
OFFSET SPECIFIED IN DATA  
ELEMENT LOCATOR

MASK SPECIFIED IN  
DATA ELEMENT  
LOCATOR

BIT MASKING  
OPERATOR  
802

SELECTED  
DATA  
ELEMENT

UPPER BOUND  
FROM FILTERING  
RULE

UPPER BOUND  
COMPARATOR  
804

LOWER BOUND  
COMPARATOR  
806

LOWER BOUND  
FROM FILTERING  
RULE

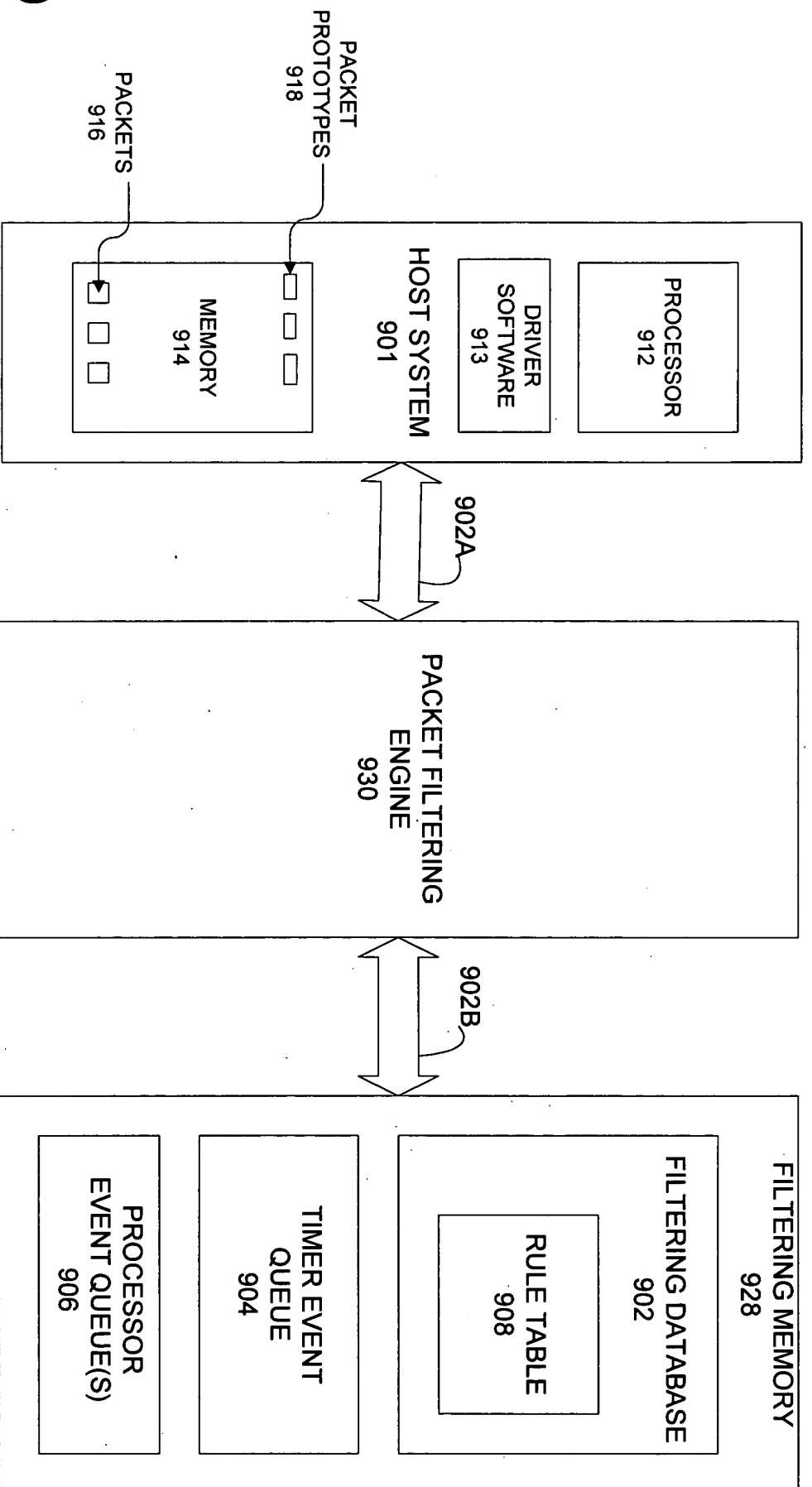
RESULTING AND  
GATE  
808

710

FIGURE 8  
(RULE EVALUATOR 710)

66270-6760750





900

FIGURE 9A

(SEQUENTIAL PACKET FILTERING  
SYSTEM)

09240919.012999

PROCESSOR EVENT QUEUE(S) 906

HIGHEST PRIORITY QUEUE

VOICE PACKET  
RECOGNIZED

MID-PRIORITY QUEUE

OTHER PACKET WITH LOWER  
QOS RECOGNIZED

• • •

LOWEST PRIORITY QUEUE

STATISTICS EVENT

FIGURE 9B

APPLICATION OF MULTIPLE EVENT QUEUES

09240919 013999

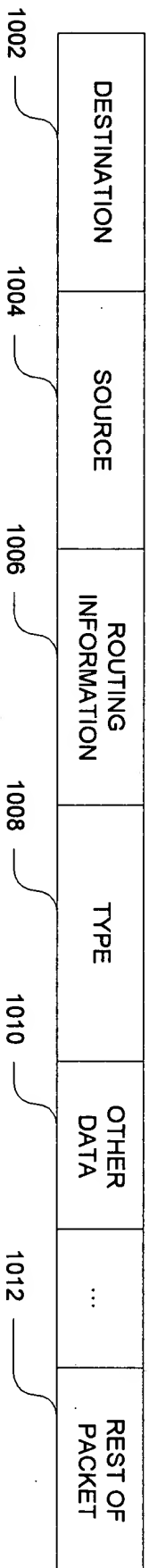


FIGURE 10  
(PACKET FORMAT)

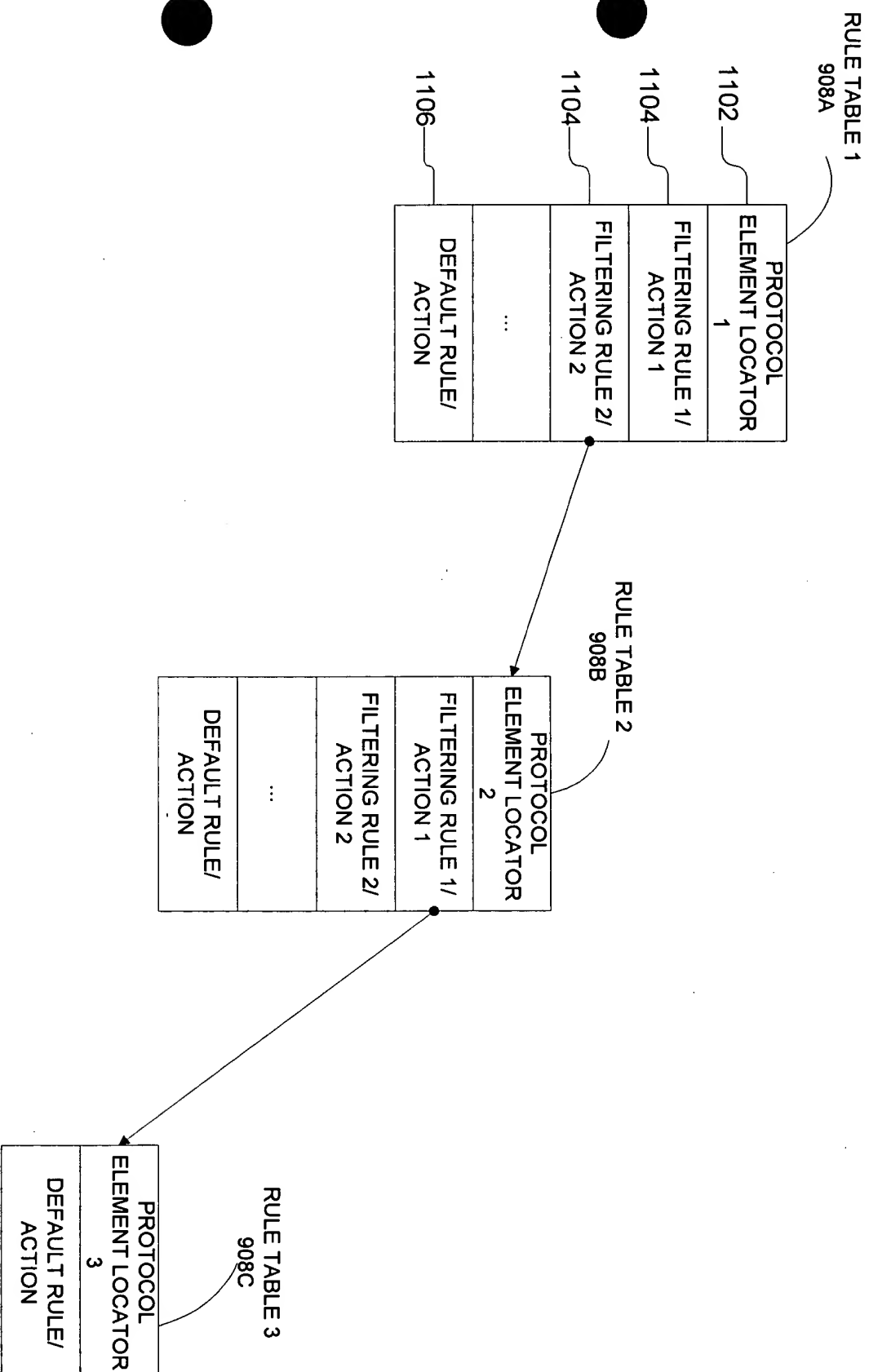


FIGURE 11

MULTI-WAY DECISION TREE AS  
LINKED RULE TABLES

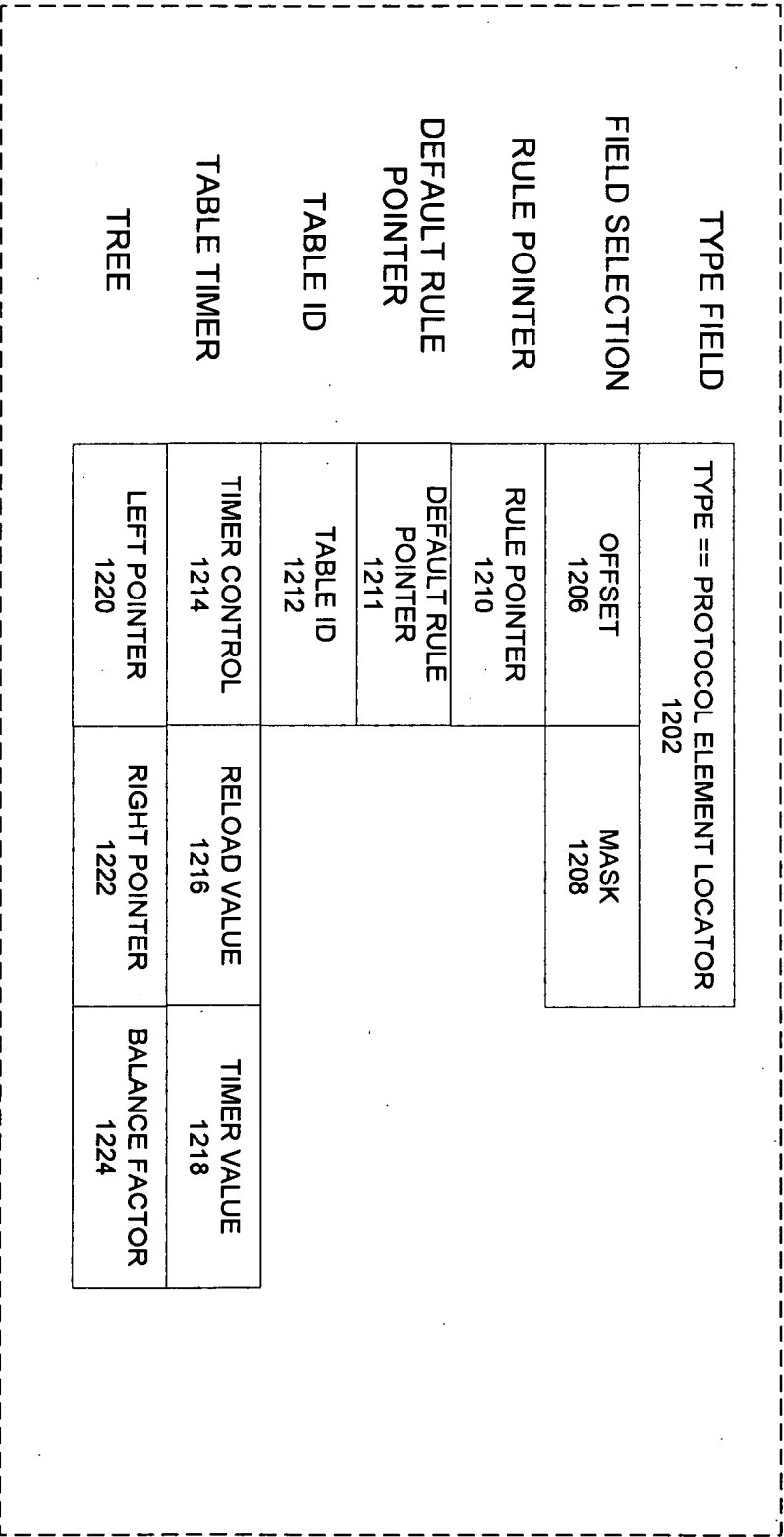
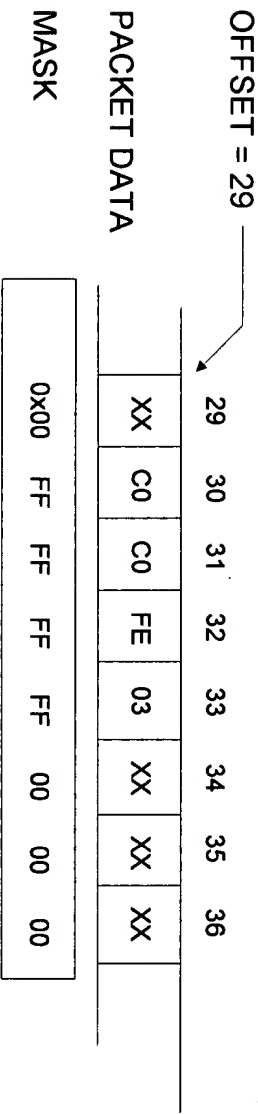


FIGURE 12A  
(PROTOCOL ELEMENT LOCATOR  
STRUCTURE)



192.192.254.3 AN IP HOST ADDRESS

FIGURE 12B  
(SELECTED PROTOCOL ELEMENT)

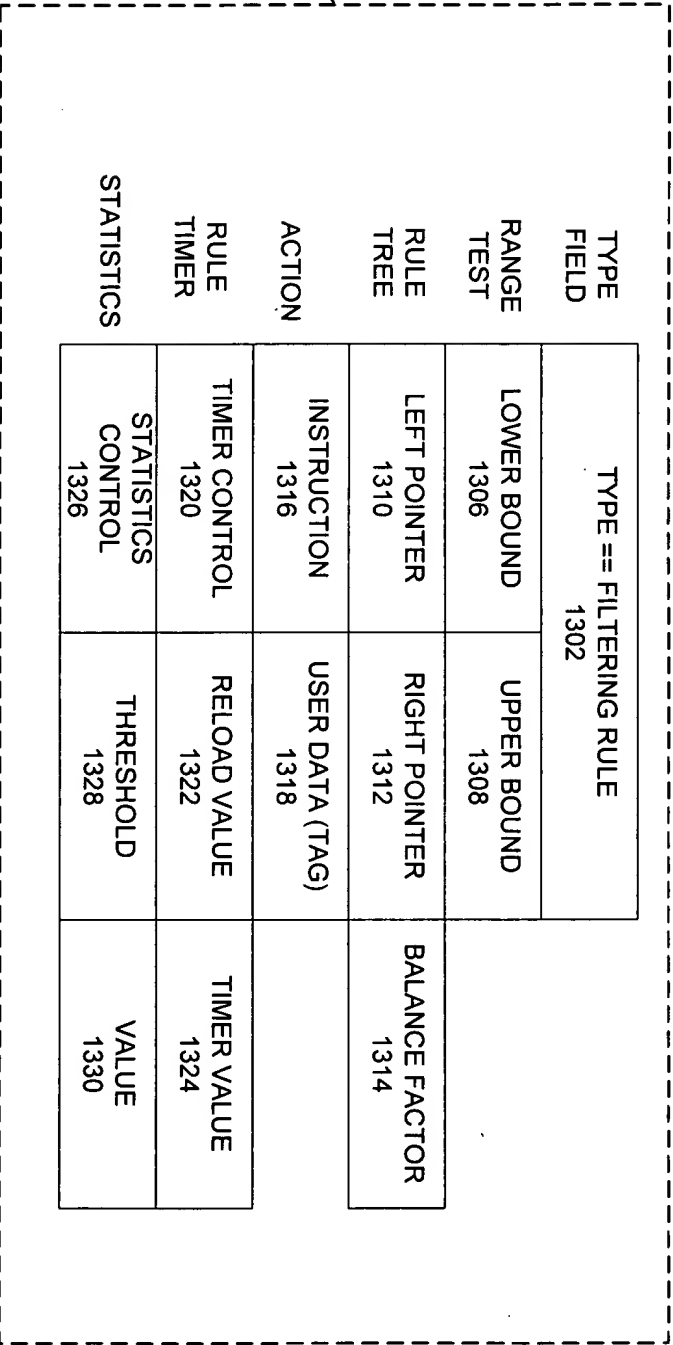


FIGURE 13A  
(FILTERING RULE)

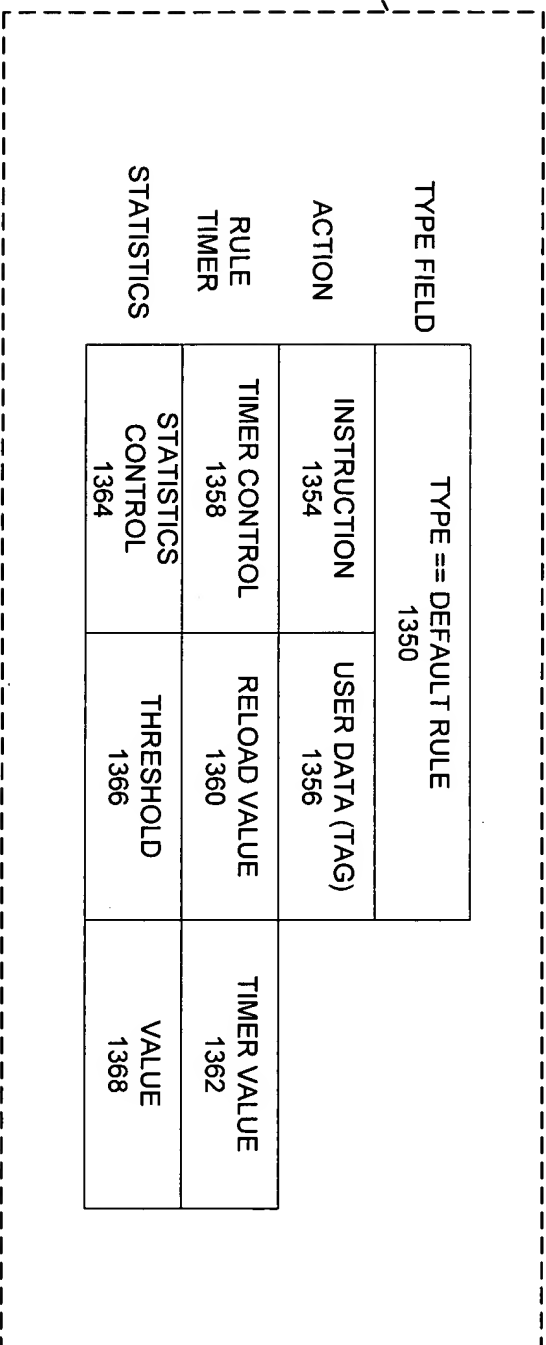
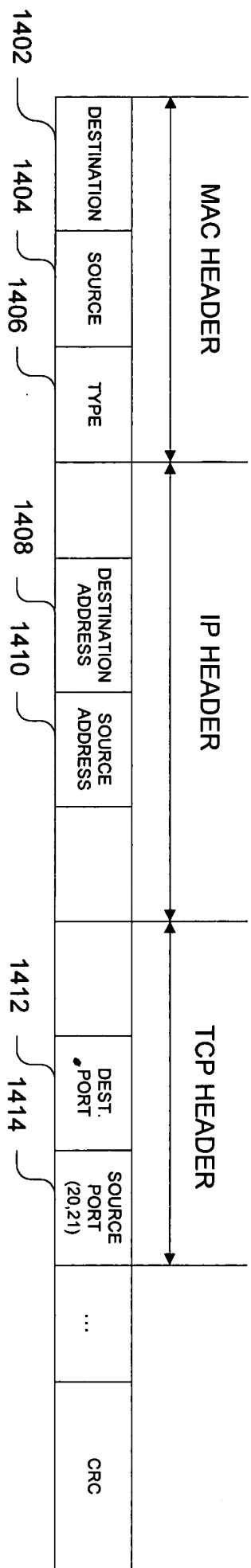


FIGURE 13B  
(DEFAULT RULE)



916

FIGURE 14A

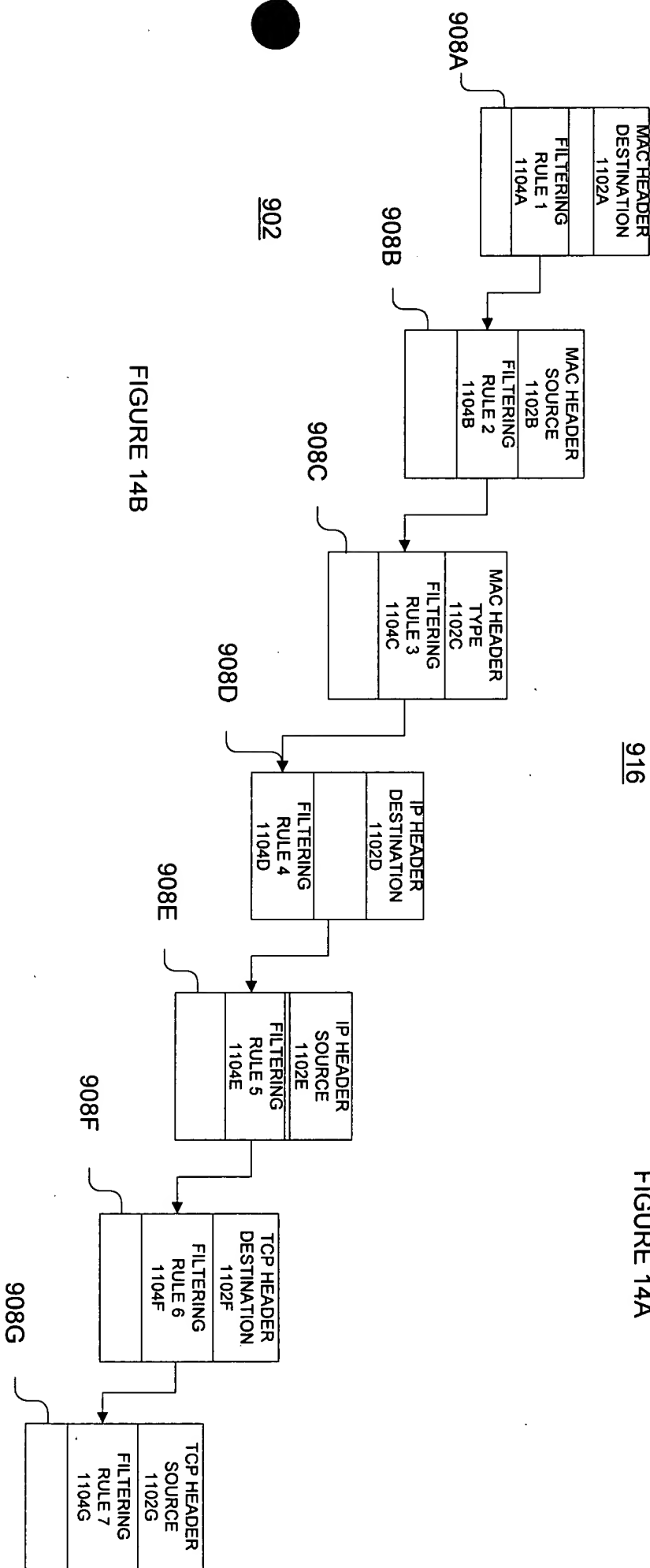


FIGURE 14B

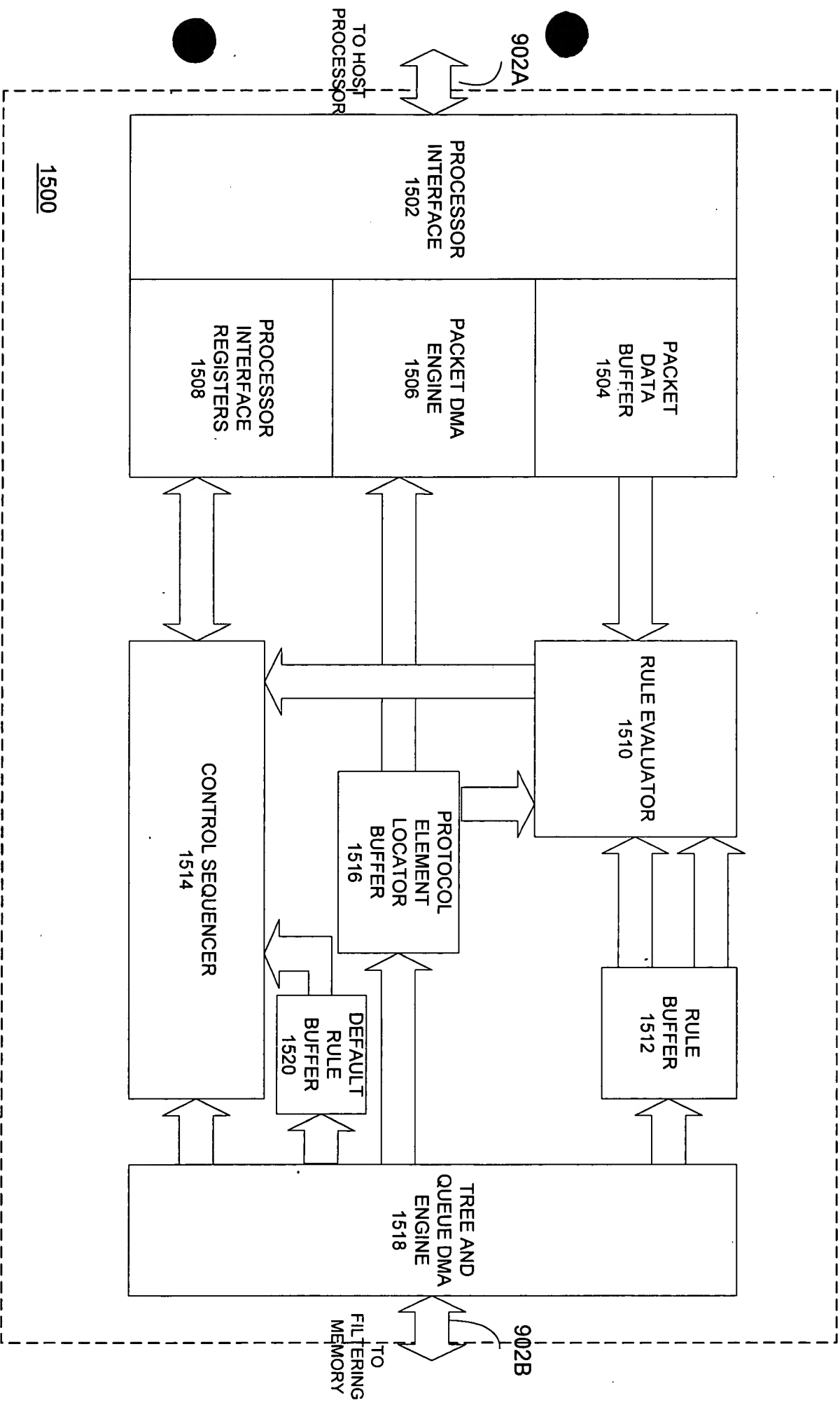


FIGURE 15  
SEQUENTIAL PACKET FILTERING  
ENGINE

00240919.012999



```

graph TD
    START((START)) --> 1602[RETRIEVE PROTOCOL ELEMENT LOCATOR FROM FILTERING DATA BASE]
    1602 --> 1604[RETRIEVE PACKET DATA FROM HOST MEMORY]
    1604 --> 1606[USE OFFSET AND MASK FROM PROTOCOL ELEMENT LOCATOR IN RULE TABLE TO SELECT PROTOCOL ELEMENT FROM PACKET]
    1606 --> 1608[EVALUATE FILTERING RULE IN RULE TABLE WITH PROTOCOL ELEMENT]
    1608 --> 1610{IS FILTERING RULE TRUE?}
    1610 -- Yes --> 1612[EXECUTE ACTION ASSOCIATED WITH FILTERING RULE]
    1610 -- No --> 1611{MORE FILTERING RULES?}
    1611 -- Yes --> 1611
    1611 -- No --> 1614[EXECUTE ACTION ASSOCIATED WITH DEFAULT RULE]
    1612 --> 1616{IS ACTION A POINTER TO ANOTHER RULE TABLE?}
    1616 -- Yes --> START
    1616 -- No --> END((END))
    1614 --> END

```

FIGURE 16

66210-670710

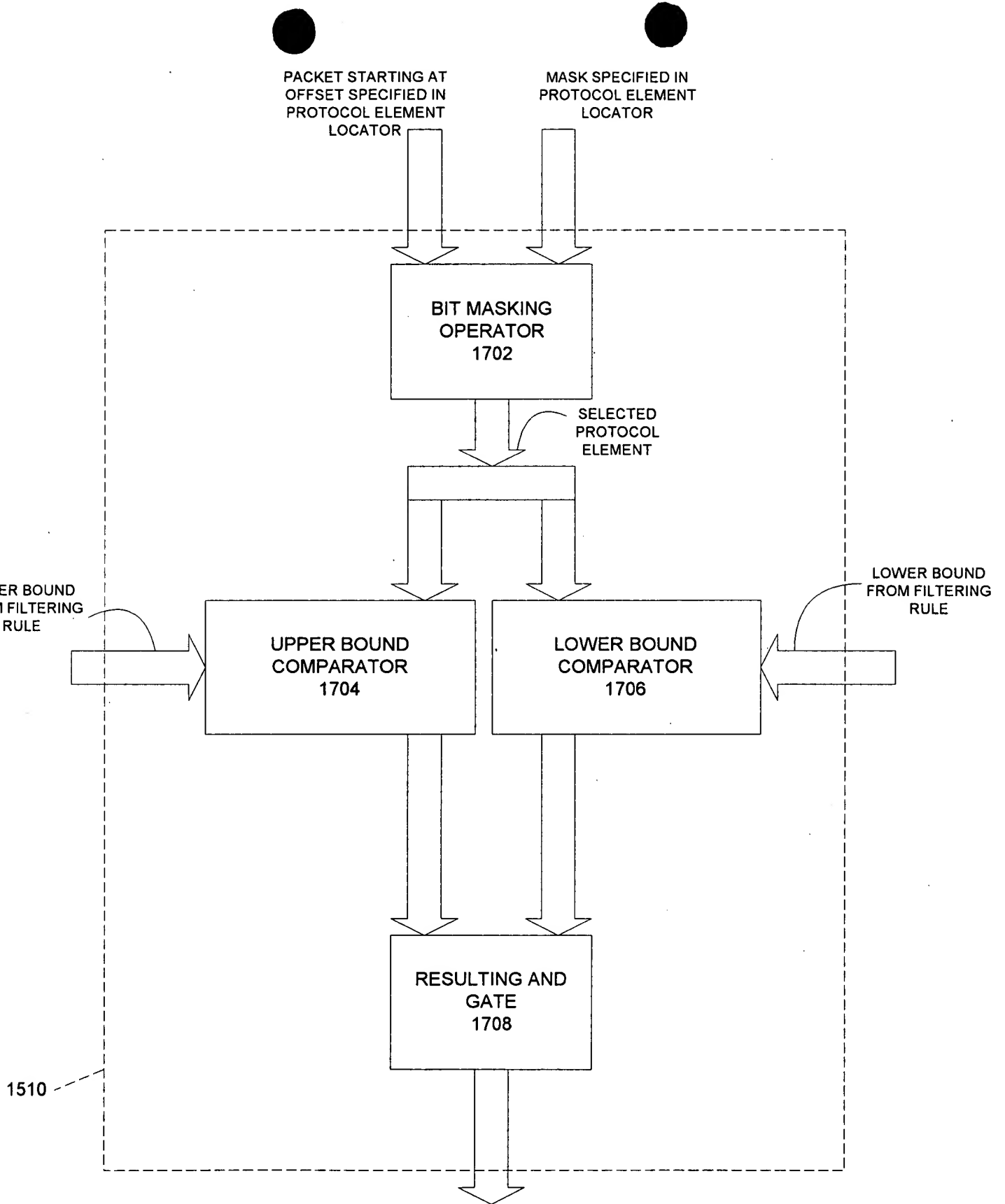
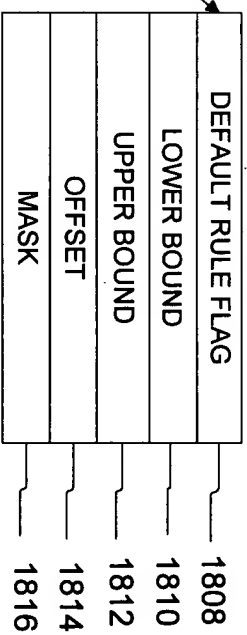


FIGURE 17  
(RULE EVALUATOR)

PROTOCOL ELEMENT  
 DESCRIPTOR 1804A



PACKET PROTOTYPE 918

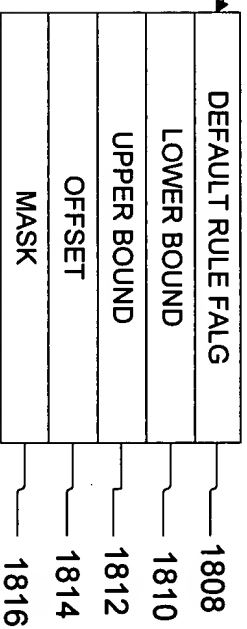
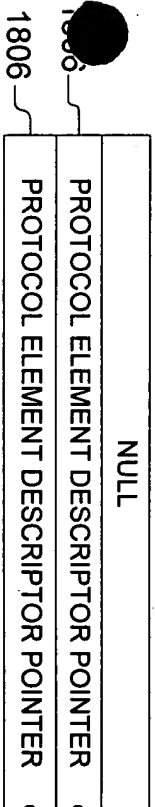
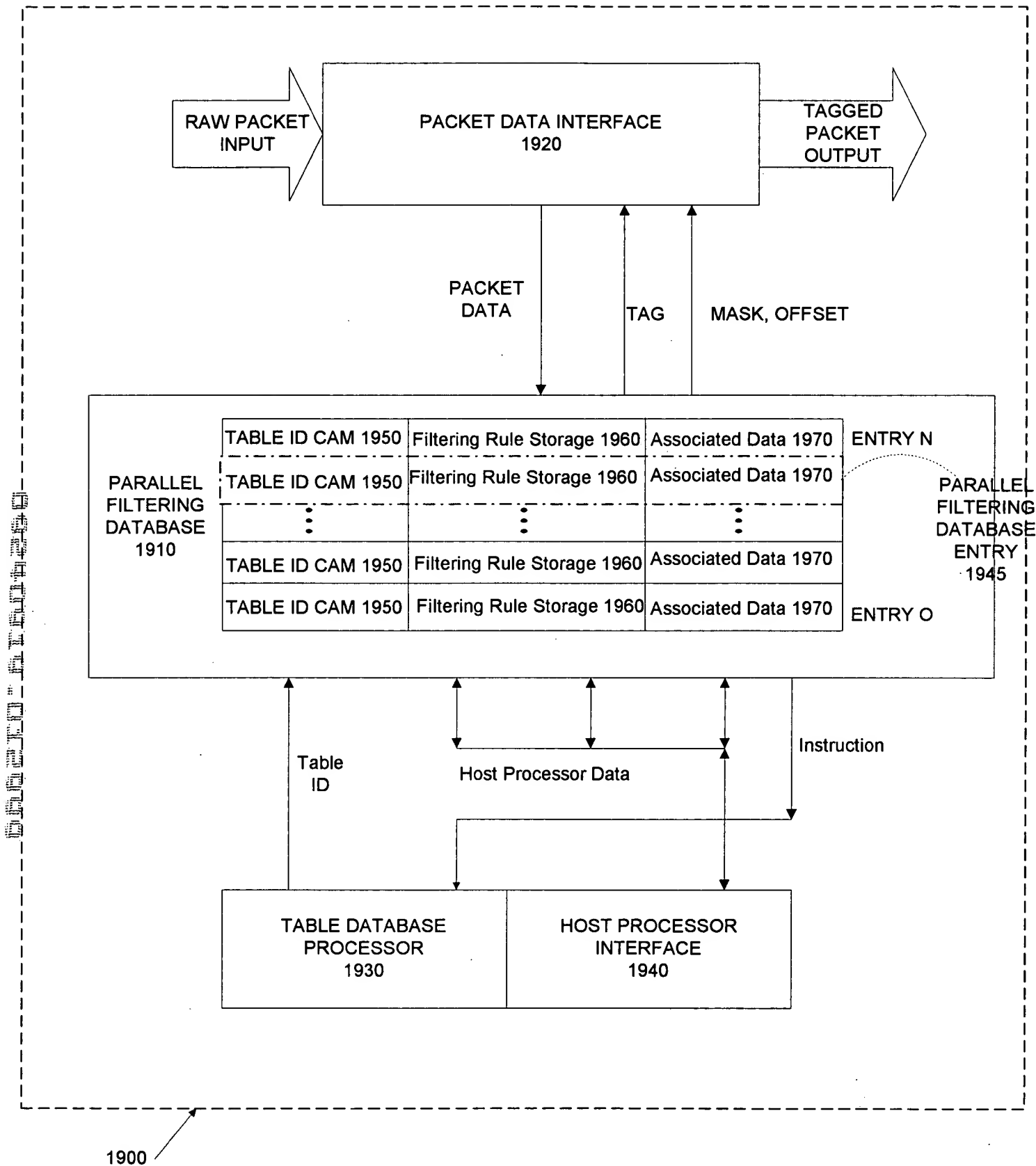


FIGURE 18

PROTOCOL ELEMENT  
 DESCRIPTOR 1804B



**FIGURE 19**  
PARALLEL PACKET FILTERING SYSTEM

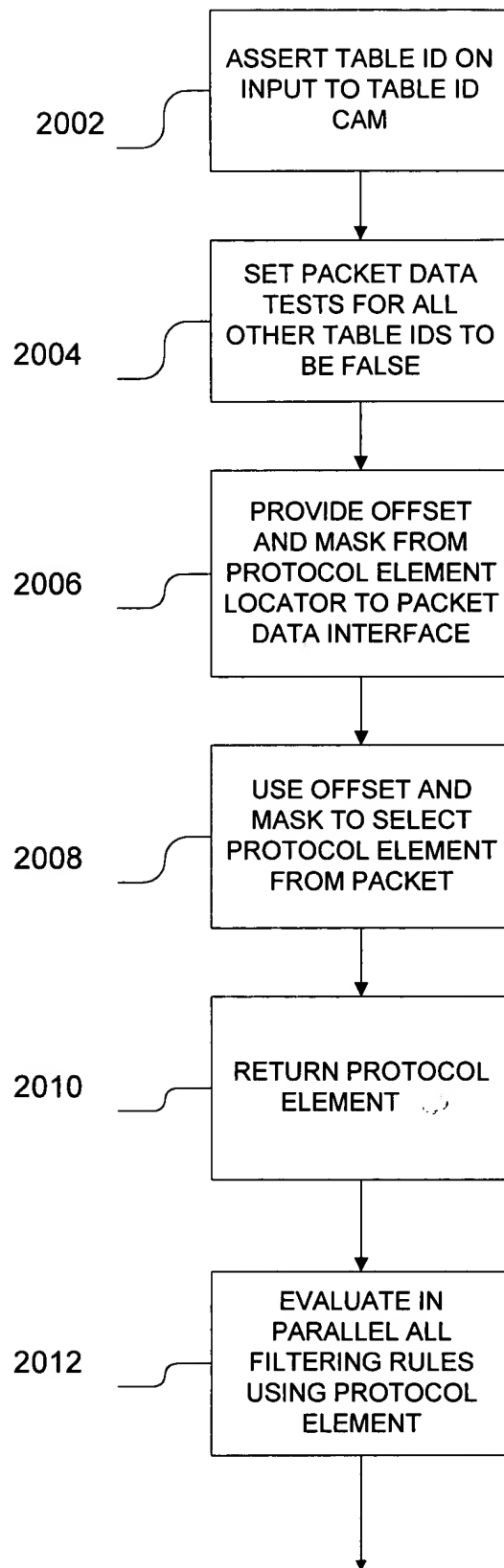


FIGURE 20A

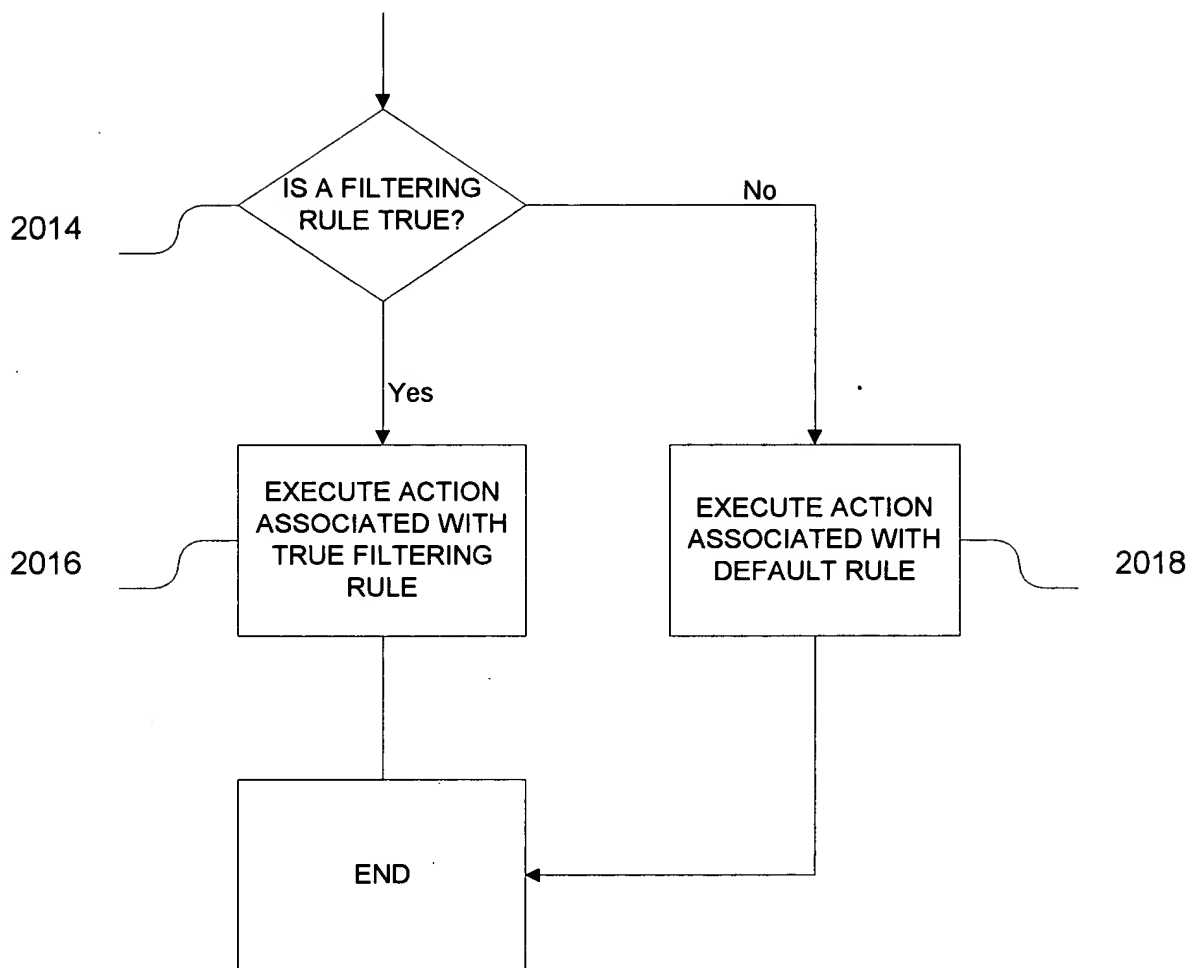


FIGURE 20B